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| 09/742,039 | 12/19/2000 | Anthony Mauro | 990502 | 9961 |
| 23696 7590 06/15/2007 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121 | | | EXAMINER ABRISHAMKAR, KAVEH | |
| | | | ART UNIT 2131 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

09/742,039

Applicant(s)

MAURO, ANTHONY

Examiner

Kaveh Abrishamkar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6-9,14-17, 22-25 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6-9,14-17, 22-25 and 30-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment filed on March 23, 2007. Claims 1,4-6-9,14-17, 22-25 and newly added claims 30-33 are currently pending consideration.

Response to Arguments

2. Applicant's arguments filed March 23, 2007 have been fully considered but they are not persuasive for the following reasons:

Regarding claim 1, the Applicant argues that the Cited Prior Art (CPA), Gersho et al. (U.S. Patent 6,233,550), does not teach that the transition vocoder frames comprise background noise information. This argument is not found persuasive. The CPA discloses that a special coding mode is used for transition speech, "designed to capture the location, the structure, and the strength of local time events that characterize the transition portions of the speech" (Gersho: column 10, lines 50-53). The location, structure and strength of local time events is interpreted as being the background noise information as there is no voice, but events that characterize the transition portions of the speech (background information). Regarding claim 8, the Applicant argues that the CPA, Gersho in view of Udaya Bhaskar et al. (U.S. Patent 6,691,092), does not teach "disabling the state vector for each inactive vocoder frame." This argument is not found persuasive. Udaya Bhaskar discloses that a state vector has two sections, one for

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"steady state vectors" and one for "transient vectors" (Udaya Bhaskar: column 12 lines 1-5). Therefore, for inactive vocoder frames, there is no vector (inactive) which is being incremented. The rejection is applied to the amended claims as given below.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1,4,6-7, 14-15 and 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Gersho et al. (U.S. Patent 6,233,55).

Regarding claim 1, Gersho discloses:

A method of controlling discontinuous transmissions, comprising the steps of:
determining a voice activity level in a digitized audio signal (Figure 4A item 18, column 10 lines 38 – 41, column 13 lines 17 – 53);
generating a control signal based on the level of voice activity detected (column 10 lines 38 – 41, column 13 lines 17 – 53);
generating active vocoder frames at a predetermined rate in a transmitter if said control signal indicates a first level of speech activity (Figure 4A item 52, column 10 lines 42 – 53, column 13 lines 17 – 53);

generating inactive vocoder frames if said control signal indicates a second level of speech activity (Figure 4A item 50, column 10 lines 42 – 53, column 13 lines 17 – 53); and

generating transition vocoder frames if said control signal indicates a transition from said first level to said second level, said transition vocoder frames comprising background noise information (Figure 4A item 54, column 10 lines 42 – 53, column 13 lines 17 – 53).

Regarding claim 4, Gersho discloses:

A discontinuous transmission controller, comprising:

a vocoder for generating active vocoder frames from a digitized audio signal at a predetermined output rate if speech is present, for generating inactive vocoder frames during periods of speech inactivity, and for generating transition frames during transitions from speech activity to speech inactivity, said transition frames comprising background noise information (Figure 4A items 50, 52, 54, column 10 lines 38 – 53, column 13 lines 17 – 53).

4. Claims 6-7 are analogous to claim 1 in subject matter and limitations and therefore, are rejected following the same reasoning.

5. Claims 14-15 are analogous to claims 1 in subject matter and limitations and therefore, are rejected following the same reasoning.

6. Claims 22-23 are computer-readable medium claims analogous to the method claim presented by claim 1, and therefore, are rejected following the same reasoning.

7. Claims 8, 16, 24, and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al. (U.S. Patent No. 6,233,550) in view of Udaya Bhaskar et al. (U.S. Patent No. 6,691,092).

Regarding claim 8, Gersho discloses:

A method for controlling discontinuous transmissions, comprising:

receiving digitized audio signal (Figure 4A item 18, column 10 lines 38 – 41, column 13 lines 17 – 53);

determining a speech activity level in the received digitized audio signal (Figure 4A item 18, column 10 lines 38 – 41, column 13 lines 17 – 53);

generating a control signal based on the determined speech activity level (column 10 lines 38 – 41, column 13 lines 17 – 53);

generating active vocoder frames in a transmitter if said control signal indicates a transition between said active speech activity and inactive speech activity (Figure 4A item 52, column 10 lines 42 – 53, column 13 lines 17 – 53);

generating transition frames in the transmitter if said control signal indicates a transition between said active speech activity and inactive speech activity (Figure 4A item 54, column 10 lines 42 – 53 , column 13 lines 17 – 53); and

generating no vocoder frame in the transmitter if said control signal indicates inactive speech activity (Figure 4A item 50, column 10 lines 42 – 53, column 13 lines 17 – 53).

Gersho does not explicitly disclose a state vector which is incremented when at least one active or transition frame is generated. Udaya Bhaskar disclose state vectors representing both transient and steady state vectors, but does not provide a state vector for an inactive vocoder frame (column 11 line 66 – column 12 line 13). The transient vectors represent the changes in the speech levels and other non-stationary events. The use of state vectors allows the tracking of abrupt variations in speech levels, and maintains the accuracy of the speech level. Gersho and Udaya Bhaskar are analogous arts in that both receive an speech/voice input and both pertain to voice activity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the state vectors to track the different types of speech in order to “to track the abrupt variations in speech levels during onsets and other non-stationary events, while maintaining the accuracy of the speech level during stationary conditions.”

7. Claim 16 is an apparatus claim analogous to the method claim of claim 8, and therefore, is rejected following the same reasoning.

9. Claim 24 is a computer-readable medium claim analogous to the method claim of claim 8, and therefore, is rejected following the same reasoning.

Claim 30 is rejected as applied above in rejecting claim 1. Gersho does not explicitly disclose a state vector which is incremented when at least one active or transition frame is generated. Udaya Bhaskar disclose state vectors representing both transient and steady state vectors, but does not provide a state vector for an inactive vocoder frame (column 11 line 66 – column 12 line 13). The transient vectors represent the changes in the speech levels and other non-stationary events. The use of state vectors allows the tracking of abrupt variations in speech levels, and maintains the accuracy of the speech level. Gersho and Udaya Bhaskar are analogous arts in that both receive an speech/voice input and both pertain to voice activity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the state vectors to track the different types of speech in order to “to track the abrupt variations in speech levels during onsets and other non-stationary events, while maintaining the accuracy of the speech level during stationary conditions.”

Claim 31 is rejected as applied above in rejecting claim 4. Gersho does not explicitly disclose a state vector which is incremented when at least one active or transition frame is generated. Udaya Bhaskar disclose state vectors representing both transient and steady state vectors, but does not provide a state vector for an inactive vocoder frame (column 11 line 66 – column 12 line 13). The transient vectors represent the changes in

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the speech levels and other non-stationary events. The use of state vectors allows the tracking of abrupt variations in speech levels, and maintains the accuracy of the speech level. Gersho and Udaya Bhaskar are analogous arts in that both receive an speech/voice input and both pertain to voice activity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the state vectors to track the different types of speech in order to "to track the abrupt variations in speech levels during onsets and other non-stationary events, while maintaining the accuracy of the speech level during stationary conditions."

Claim 32 is rejected as applied above in rejecting claim 6. Gersho does not explicitly disclose a state vector which is incremented when at least one active or transition frame is generated. Udaya Bhaskar disclose state vectors representing both transient and steady state vectors, but does not provide a state vector for an inactive vocoder frame (column 11 line 66 – column 12 line 13). The transient vectors represent the changes in the speech levels and other non-stationary events. The use of state vectors allows the tracking of abrupt variations in speech levels, and maintains the accuracy of the speech level. Gersho and Udaya Bhaskar are analogous arts in that both receive an speech/voice input and both pertain to voice activity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the state vectors to track the different types of speech in order to "to track the abrupt variations in speech levels during onsets and other non-stationary events, while maintaining the accuracy of the speech level during stationary conditions."

Claim 33 is rejected as applied above in rejecting claim 14. Gersho does not explicitly disclose a state vector which is incremented when at least one active or transition frame is generated. Udaya Bhaskar disclose state vectors representing both transient and steady state vectors, but does not provide a state vector for an inactive vocoder frame (column 11 line 66 – column 12 line 13). The transient vectors represent the changes in the speech levels and other non-stationary events. The use of state vectors allows the tracking of abrupt variations in speech levels, and maintains the accuracy of the speech level. Gersho and Udaya Bhaskar are analogous arts in that both receive an speech/voice input and both pertain to voice activity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the state vectors to track the different types of speech in order to “to track the abrupt variations in speech levels during onsets and other non-stationary events, while maintaining the accuracy of the speech level during stationary conditions.”

10. Claims 9, 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al. (U.S. Patent No. 6,233,550) in view of Udaya Bhaskar et al. (U.S. Patent No. 6,691,092), and further in view of Duke et al. (U.S. Patent 6,272,633).

Claim 9 is rejected as applied above in rejecting claim 8. The system of Gersho and Udaya Bhaskar does not explicitly disclose encrypting the generated active and transition vocoder frames. Duke discloses a system (Figure 2) with an encryption and

decryption module for encrypting and decrypting digitized voice. The voice frames are placed in a buffer (queue) and are processed in turn by the encryption/decryption module (column 2 lines 28 – 48). In one embodiment discussed by Duke, the voice frames are encrypted and later decrypted by codebook algorithms (column 2 lines 28 – 48). The state vector which is provided to the encryption/decryption modules is disabled when the buffer (queue) is in an underflow condition. The disclosures of Gersho, Udaya Bhaskar and Duke are analogous arts in the respect that all deal with voice communication over a network. Gersho provides the voice activity detection, frame generation, while Duke provides the encryption/decryption functions. Duke states, "many users have begun to utilize digital networks for voice communications" and that "confidentiality is a primary concern" (column 1 lines 25 – 31). It would have been obvious to one of ordinary skill in the art to use the encryption/decryption modules that Duke uses to secure voice communications in conjunction with the system of Gersho to provide confidentiality and security for the voice communications.

11. Claim 17 is an apparatus claim analogous to the method claim of claim 9, and therefore, is rejected following the same reasoning.

12. Claim 25 is a computer-readable medium claim analogous to the method claim of claim 9, and therefore, is rejected following the same reasoning.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Abrishamkar whose telephone number is 571-272-3786. The examiner can normally be reached on Monday thru Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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